

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A semiconductor processing device ~~being~~ capable of inputting/outputting encrypted data from/to an outside ~~of the device and being~~ formed over a semiconductor substrate, ~~the device~~ comprising:

a first non-volatile memory for erasing stored information on a first data length unit;

a second non-volatile memory for erasing stored information on a second data length unit; and

a central processing unit,

wherein the first non-volatile memory is used for storing an encryption key to be used for encrypting the data, ~~and~~ the second non-volatile memory is used for storing a program to be processed by the central processing unit,

~~wherein~~ each of the first non-volatile memory and the second non-volatile memory ~~has~~ ~~includes~~ a plurality of non-volatile memory cells,

~~wherein~~ each of the non-volatile memory cells ~~has~~ ~~includes~~

a channel region between a first diffusion layer region and a second diffusion layer region which are formed on the substrate,

~~has an electric charge storage layer on over the channel region through a first insulating film,~~

~~has a first gate terminal on over the electric charge storage layer through a second insulating film,~~

~~and has a second gate terminal through the first gate terminal and a third insulating film on a second channel region which is adjacent to a first channel region provided under the electric charge storage layer over the channel region,~~

a first insulating film on the channel region under the electric charge storage layer and the second gate terminal, and

a second insulating film between the electric charge storage layer and the first gate terminal,

wherein the semiconductor processing device is constructed to carry out an operation for changing a threshold voltage of the memory cell by injecting a hot electron generated in the channel region provided under the a third insulating film is injected into the electric charge storage layer or by extracting an electric charge is extracted from the electric charge storage layer, thereby

carrying out an operation for changing a threshold voltage of the memory cell

wherein the first non-volatile memory includes

a plurality of switch circuits;

a first control signal line;

a plurality of first control signal sub-lines; and

a second control signal line;

wherein the first control signal line is coupled

with corresponding first control signal sub-lines via a

corresponding switch circuit, said switch circuit

constructed to select among various ones of said first

control signal sub-lines,

wherein the first control signal sub-line is

coupled with the first gate terminals of a

predetermined number of the non-volatile memory cells

in one row and a corresponding switch circuit, and

wherein the second control signal line is coupled

with the second gate terminal of the non-volatile

memory cells in one row, and

wherein the second non-volatile memory includes

the first control signal line and the second

control signal line,

wherein the first control signal line is coupled

with the first gate terminal of the non-volatile memory

cells in one row, and

wherein the second control signal line is coupled with the second gate terminal of the non-volatile memory cells in one row.

2. (original) The semiconductor processing device according to claim 1,

wherein the first non-volatile memory is further used for storing information to be utilized for specifying an individual.

3. (currently amended) The semiconductor processing device according to claim 2,

wherein ~~the-a~~ first data length is smaller than ~~the-a~~ second data length.

4. (currently amended) The semiconductor processing device according to claim 3, further comprising:

a terminal ~~to-be-used-for an~~ input/output from/to an outside of the semiconductor processing device,

the program being supplied from the outside through the terminal and stored in the second non-volatile memory.

5. (currently amended) The semiconductor processing device according to claim 4,

wherein the central processing unit can give accesses to the first non-volatile memory and the second non-volatile memory in parallel.

6. (currently amended) The semiconductor processing device according to claim 5,

wherein the first non-volatile memory has a memory array portion constituted by comprising a plurality of memory cells and a control portion for controlling access to a selected memory cell,

wherein the second non-volatile memory has a memory array portion constituted by comprising a plurality of memory cells and a control portion for controlling access to a selected memory cell, and

wherein the control portion of the first non-volatile memory and the control portion of the second non-volatile memory are common at least partially common.

7. (currently amended) The semiconductor processing device according to claim 6,

wherein a common part of the control portion to be common is an amplifier circuit to be used for amplifying a read signal when data are to be read from a memory cell.

8. (currently amended) The semiconductor processing device according to claim 6,

wherein a common part of the control portion ~~to be~~ ~~common~~ is a voltage generating circuit for generating a voltage ~~to be~~ applied to a memory cell when access is ~~to be~~ given to the memory cell.

9. (currently amended) The semiconductor processing device according to claim 6,

wherein a common part of the control portion ~~to be~~ ~~common~~ is a decoder circuit for selecting a memory cell when access is ~~to be~~ given to the memory cell.

10. (currently amended) An IC card ~~being~~ enclosed with a synthetic resin, comprising:

a first non-volatile memory for erasing stored information on a first data length unit;

a second non-volatile memory for erasing stored information on a second data length unit;

a central processing unit; and

a terminal for inputting/outputting data from/to an outside of the IC card,

wherein encrypted data are input/output from/to the outside of the IC card,

wherein the first non-volatile memory is used for storing an encryption key to be utilized for encrypting the data, and the second non-volatile memory is used for storing a program to be processed by the central processing unit,

wherein each of the first non-volatile memory and the second non-volatile memory has includes a plurality of non-volatile memory cells,

wherein each of the non-volatile memory cells has includes

a channel region between a first diffusion layer region and a second diffusion layer region which are formed on the substrate,

has an electric charge storage layer on over the channel region through a first insulating film,

has a first gate terminal on over the electric charge storage layer through a second insulating film,

and has a second gate terminal through the first gate terminal and a third insulating film on a second channel region which is adjacent to a first channel region provided under the electric charge storage layer over the channel region,

a first insulating film on the channel region under the electric charge storage layer and the second gate terminal, and

a second insulating film between the electric charge storage layer and the first gate terminal,
wherein the semiconductor processing device is
constructed to carry out an operation for changing a
threshold voltage of the memory cell by injecting a hot
electron generated in the channel region provided under the
a third insulating film is injected into the electric charge
storage layer or by extracting an electric charge is
extracted from the electric charge storage layer, thereby
carrying out an operation for changing a threshold voltage
of the memory cell,

wherein the first non-volatile memory includes
a plurality of switch circuits;
a first control signal line;
a plurality of first control signal sub-lines; and
a second control signal line;
wherein the first control signal line is coupled
with corresponding first control signal sub-lines via a
corresponding switch circuit, said switch circuit
constructed to select among various ones of said first
control signal sub-lines,

wherein the first control signal sub-line is
coupled with the first gate terminals of a
predetermined number of the non-volatile memory cells
in one row and a corresponding switch circuit, and

wherein the second control signal line is coupled with the second gate terminal of the non-volatile memory cells in one row, and wherein the second non-volatile memory includes the first control signal line and the second control signal line, wherein the first control signal line is coupled with the first gate terminal of the non-volatile memory cells in one row, and wherein the second control signal line is coupled with the second gate terminal of the non-volatile memory cells in one row.

11. (currently amended) An IC card being enclosed with a synthetic resin, comprising:

a first non-volatile memory for erasing stored information on a first data length unit;

a second non-volatile memory for erasing stored information on a second data length unit;

a central processing unit; and

an antenna for inputting/outputting data from/to an outside of the IC card,

wherein encrypted data are input/output from/to the outside of the IC card,

wherein the first non-volatile memory is used for storing an encryption key to be utilized for encrypting the data, and the second non-volatile memory is used for storing a program to be processed by the central processing unit,

wherein each of the first non-volatile memory and the second non-volatile memory has includes a plurality of non-volatile memory cells,

wherein each of the non-volatile memory cells has includes

a channel region between a first diffusion layer region and a second diffusion layer region which are formed on the substrate,

has an electric charge storage layer on over the channel region through a first insulating film,

has a first gate terminal on over the electric charge storage layer through a second insulating film,

and has a second gate terminal through the first gate terminal and a third insulating film on a second channel region which is adjacent to a first channel region provided under the electric charge storage layer over the channel region,

a first insulating film on the channel region under the electric charge storage layer and the second gate terminal, and

a second insulating film between the electric charge storage layer and the first gate terminal,
wherein the semiconductor processing device is
constructed to carry out an operation for changing a
threshold voltage of the memory cell by injecting a hot
electron generated in the channel region provided under the
a third insulating film is injected into the electric charge
storage layer or by extracting an electric charge is
extracted from the electric charge storage layer, thereby
carrying out an operation for changing a threshold voltage
of the memory cell,

wherein the first non-volatile memory includes
a plurality of switch circuits;
a first control signal line;
a plurality of first control signal sub-lines; and
a second control signal line;
wherein the first control signal line is coupled
with corresponding first control signal sub-lines via a
corresponding switch circuit, said switch circuit
constructed to select among various ones of said first
control signal sub-lines,

wherein the first control signal sub-line is
coupled with the first gate terminals of a
predetermined number of the non-volatile memory cells
in one row and a corresponding switch circuit, and

wherein the second control signal line is coupled with the second gate terminal of the non-volatile memory cells in one row, and wherein the second non-volatile memory includes the first control signal line and the second control signal line, wherein the first control signal line is coupled with the first gate terminal of the non-volatile memory cells in one row, and wherein the second control signal line is coupled with the second gate terminal of the non-volatile memory cells in one row.

Claims 12-13. (cancelled)

14. (currently amended) A semiconductor processing device ~~being~~ capable of inputting/outputting encrypted data to/from an outside of the device, the device comprising: a first non-volatile memory for erasing stored information on a first data length unit; a second non-volatile memory for erasing stored information on a second data length unit; and a central processing unit, wherein each of the first non-volatile memory and the second non-volatile memory has a plurality of memory cells,

wherein each of the memory cells has—includes a source region, a drain region and a channel region between the source region and the drain region, has—a data storage insulating layer and a first gate ~~on—over~~ the channel region ~~through~~ an insulating layer, and has—a second gate ~~on—over~~ the data storage insulating layer, wherein each of the first non-volatile memory and the second non-volatile memory has—includes a plurality of first word lines, in which corresponding memory cells are connected to the first word lines when the stored information is erased from the first non-volatile memory, corresponding memory cells are connected to the first word lines when the stored information is erased from the second non-volatile memory, and ~~the~~—a number of the memory cells to be connected to the first word lines in the first non-volatile memory is smaller than ~~that~~—a number of the memory cells to be connected to the first word lines in the second non-volatile memory, wherein the first non-volatile memory includes a plurality of switch circuits; a first control signal line;

a plurality of first control signal sub-lines; and
a second control signal line;
wherein the first control signal line is coupled
with corresponding first control signal sub-lines via a
corresponding switch circuit, said switch circuit
constructed to select among various ones of said first
control signal sub-lines,
wherein the first control signal sub-line is
coupled with the first gate terminals of a
predetermined number of the non-volatile memory cells
in one row and a corresponding switch circuit, and
wherein the second control signal line is coupled
with the second gate terminal of the non-volatile
memory cells in one row, and
wherein the second non-volatile memory includes
the first control signal line and the second
control signal line,
wherein the first control signal line is coupled
with the first gate terminal of the non-volatile memory
cells in one row, and
wherein the second control signal line is coupled
with the second gate terminal of the non-volatile
memory cells in one row.

Claims 15-16. (cancelled)

17. (currently amended) The semiconductor processing device according to claim [[16]]14,

wherein the switch ~~unit~~circuit is ~~an~~a MOS transistor of ~~the~~a same conductive type as the non-volatile memory cell.

18. (currently amended) A semiconductor processing device comprising:

a first non-volatile memory for erasing stored information on a first data length unit;

a second non-volatile memory for erasing stored information on a second data length unit;

a central processing unit; and

an external interface circuit,

wherein the first non-volatile memory is used for storing data, ~~and~~ the second non-volatile memory is used for storing a program to be processed by the central processing unit,

wherein each of the first non-volatile memory and the second non-volatile memory has a plurality of non-volatile memory cells,

wherein each of the non-volatile memory cells ~~has~~ includes

a channel region between a first diffusion layer region and a second diffusion layer region which are formed on the substrate,

~~has an electric charge storage layer on over the channel region through a first insulating film,~~

~~has a first gate terminal on over the electric charge storage layer through a second insulating film, and~~

~~has a second gate terminal through the first gate terminal and a third insulating film on a second channel region which is adjacent to a first channel region provided under the electric charge storage layer over the channel region,~~

~~a second insulating film between the electric charge storage layer and the first gate terminal, and a third insulating film between the channel region and the second gate terminal,~~

wherein the semiconductor processing device is constructed to carry out an operation for changing a threshold voltage of the memory cell by injecting a hot electron generated in the channel region provided under the a third insulating film is injected into the electric charge storage layer or by extracting an electric charge is extracted from the electric charge storage layer, thereby

carrying out an operation for changing a threshold voltage of the memory cell,

wherein the a first data length is smaller than the a second data length,

wherein the first non-volatile memory includes a plurality of switch circuits; a first control signal line; a plurality of first control signal sub-lines; and a second control signal line; wherein the first control signal line is coupled with corresponding first control signal sub-lines via a corresponding switch circuit, said switch circuit constructed to select among various ones of said first control signal sub-lines,

wherein the first control signal sub-line is coupled with the first gate terminals of a predetermined number of the non-volatile memory cells in one row and a corresponding switch circuit, and wherein the second control signal line is coupled with the second gate terminal of the non-volatile memory cells in one row, and wherein the second non-volatile memory includes

the first control signal line and the second control signal line,

wherein the first control signal line is coupled with the first gate terminal of the non-volatile memory cells in one row, and

wherein the second control signal line is coupled with the second gate terminal of the non-volatile memory cells in one row.

19. (currently amended) The semiconductor processing device according to claim 18,

wherein the non-volatile memory cell has a source region, a drain region, and a channel region interposed between the source region and the drain region on a semiconductor substrate, a control gate electrode provided through a first insulating film and a memory gate electrode provided through a second insulating film and an electric charge storage insulating film and isolated electrically from the control gate electrode are provided on the channel region, and a gate breakdown voltage of the control gate electrode second gate terminal is lower than that of the memory gate electrode first gate terminal.

20. (currently amended) The semiconductor processing device according to claim 19,

wherein the gate breakdown voltage of the ~~control gate electrode~~ second gate terminal is equal to that of an ~~a~~ MOS transistor included in the ~~CPU~~ central processing unit.

Claims 21-22. (cancelled)

23. (currently amended) The semiconductor processing device according to claim 19,

wherein the central processing unit can give access to ~~accesses~~ the first non-volatile memory and the second non-volatile memory in parallel.

24. (currently amended) The semiconductor processing device according to claim 23,

wherein the first non-volatile memory has a memory array portion ~~constituted by~~ comprising a plurality of memory cells and a control portion for controlling access to a selected memory cell,

wherein the second non-volatile memory has a memory array portion ~~constituted by~~ comprising a plurality of memory cells and a control portion for controlling access to a selected memory cell, and

wherein the control portion of the first non-volatile memory and the control portion of the second non-volatile memory are ~~common~~ at least partially common.

25. (currently amended) The semiconductor processing device according to claim 24,

wherein a common part of the control portion ~~to be~~
~~common~~ is an amplifier circuit ~~to be used~~ for amplifying a read signal when data are ~~to be~~ read from a memory cell.

26. (currently amended) The semiconductor processing device according to claim 24,

wherein a common part of the control portion ~~to be~~
~~common~~ is a voltage generating circuit for generating a voltage to be applied to a memory cell when access is ~~to be~~ given to the memory cell.

27. (currently amended) The semiconductor processing device according to claim 24,

wherein a common part of the control portion ~~to be~~
~~common~~ is a decoder circuit for selecting a memory cell when access is ~~to be~~ given to the memory cell.

28. (currently amended) An IC card being enclosed with a synthetic resin, comprising:

a first non-volatile memory for erasing stored information on a first data length unit;

a second non-volatile memory for erasing stored information on a second data length unit;

a central processing unit; and

a terminal for inputting/outputting data from/to an outside of the IC card,

wherein the first non-volatile memory is used for storing data, and the second non-volatile memory is used for storing a program to be processed by the central processing unit,

wherein each of the first non-volatile memory and the second non-volatile memory has a plurality of non-volatile memory cells,

wherein each of the non-volatile memory cells has includes

a first channel region between a first diffusion layer region and a second diffusion layer region which are formed on the substrate,

has an electric charge storage layer on the first channel region through a first insulating film,

has a first gate terminal on the electric charge storage layer through a second insulating film, and

has a second gate terminal through the first gate terminal and a third insulating film on a second channel region which is adjacent to a the first channel

region provided under the electric charge storage layer,

a first insulating film between the first channel region and the electric charge storage layer,

a second insulating film between the electric charge storage layer and the first gate terminal, and
a third insulating film between the second channel region and the second gate terminal,

wherein the semiconductor processing device is
constructed to carry out an operation for changing a
threshold voltage of the memory cell by injecting a hot
electron generated in the channel region provided under the
a third insulating film is injected into the electric charge
storage layer or by extracting an electric charge is
extracted from the electric charge storage layer, thereby
carrying out an operation for changing a threshold voltage
of the memory cell,

wherein the a first data length is smaller than the a
second data length,

wherein the first non-volatile memory includes
a plurality of switch circuits;
a first control signal line;
a plurality of first control signal sub-lines; and
a second control signal line;

wherein the first control signal line is coupled with corresponding first control signal sub-lines via a corresponding switch circuit, said switch circuit constructed to select among various ones of said first control signal sub-lines,

wherein the first control signal sub-line is coupled with the first gate terminals of a predetermined number of the non-volatile memory cells in one row and a corresponding switch circuit, and

wherein the second control signal line is coupled with the second gate terminal of the non-volatile memory cells in one row, and wherein the second non-volatile memory includes

the first control signal line and the second control signal line,

wherein the first control signal line is coupled with the first gate terminal of the non-volatile memory cells in one row, and

wherein the second control signal line is coupled with the second gate terminal of the non-volatile memory cells in one row.

29. (currently amended) An IC card comprising:
a first non-volatile memory for erasing stored information on a first data length unit[,]];

a second non-volatile memory for erasing stored information on a second data length unit[[],];

a central processing unit[[],]; and

an antenna for inputting/outputting data from/to an outside of the IC card;

whichwherein the first non-volatile memory, second non-volatile memory, central processing unit, and antenna are enclosed with a synthetic resin,

wherein the first non-volatile memory is used for storing data, and the second non-volatile memory is used for storing a program to be processed by the central processing unit,

wherein each of the first non-volatile memory and the second non-volatile memory hasincludes a plurality of non-volatile memory cells,

wherein each of the non-volatile memory cells hasincludes

a first channel region between a first diffusion layer region and a second diffusion layer region which are formed on the substrate,

hasan electric charge storage layer on the channel region through a first insulating film,

hasa first gate terminal on the electric charge storage layer through a second insulating film, and

has a second gate terminal through the first gate terminal and a third insulating film on a second channel region which is adjacent to a the first channel region provided under the electric charge storage layer,

wherein the semiconductor processing device is constructed to carry out an operation for changing a threshold voltage of the memory cell by injecting a hot electron generated in the channel region provided under the a third insulating film is injected into the electric charge storage layer or by extracting an electric charge is extracted from the electric charge storage layer, thereby carrying out an operation for changing a threshold voltage of the memory cell,

wherein the a first data length is smaller than the a second data length,

wherein the first non-volatile memory includes a plurality of switch circuits; a first control signal line; a plurality of first control signal sub-lines; and a second control signal line;

wherein the first control signal line is coupled with corresponding first control signal sub-lines via a corresponding switch circuit, said switch circuit

constructed to select among various ones of said first control signal sub-lines,

wherein the first control signal sub-line is coupled with the first gate terminals of a predetermined number of the non-volatile memory cells in one row and a corresponding switch circuit, and

wherein the second control signal line is coupled with the second gate terminal of the non-volatile memory cells in one row, and wherein the second non-volatile memory includes the first control signal line and the second control signal line,

wherein the first control signal line is coupled with the first gate terminal of the non-volatile memory cells in one row, and wherein the second control signal line is coupled with the second gate terminal of the non-volatile memory cells in one row.

30. (currently amended) The semiconductor processing device according to claim 28 or 29,

wherein the non-volatile memory cell has a source region, a drain region, and a channel region interposed between the source region and the drain region on a semiconductor substrate, a control gate electrode provided

through a first insulating film and a memory gate electrode provided through a second insulating film and an electric charge storage insulating film and isolated electrically from the control gate electrode are provided on the channel region, and a gate breakdown voltage of the control gate electrode second gate terminal is lower than that of the memory gate electrode first gate terminal.

31. (currently amended) The semiconductor processing device according to claim 30,

wherein the gate breakdown voltage of the control gate electrode second gate terminal is equal to that of an a MOS transistor included in the CPUcentral processing unit.